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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,054	11/17/2003	James Y. Cho	BP1745CON	3663
34399	7590	04/05/2005	EXAMINER	
GARLICK HARRISON & MARKISON LLP P.O. BOX 160727 AUSTIN, TX 78716-0727			HUYNH, KIM T	
			ART UNIT	PAPER NUMBER

2112

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/715,054

Applicant(s)

CHO ET AL.

Examiner

Kim T. Huynh

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 23-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singh et al. (Pub No US2002/0147875)

As per claims 23, 29, Singh discloses an integrated circuit comprising:

- A bus; (fig.1, 115, ie processor bus) [0032] and
- A plurality of devices (ie bus agents) coupled to the bus in which individual devices include respective agents coupled to the bus to receive a clock signal having a rising edge and a falling edge, the agents to drive an arbitration signal onto the bus responsive to one of the rising or falling edge and to sample and evaluate the arbitration signal on the bus responsive to other of the falling or rising edge to allow one agent to request [0063-0064] and win arbitration of the bus in one clock cycle(fig.3, ie arbitration timing diagram), the one agent winning arbitration to drive an address of a traction responsive to one of the rising or falling edge of a subsequent clock cycle ([0044], ie responding agent drive the response onto the control bus) [0028-0029] , [0068] and to respond with coherent

response signals on the bus at a fixed number of clock cycle [0044], [0070] ,[0029] or cycles after the address to maintain order for coherency but in which data driven onto the bus in response to the address need not be maintained at a fixed number of clock cycle or cycles after the address to allow data to be driven out of order on the bus.[0059-0060], [0085]

Although Singh does not explicitly disclose agents involved in coherency sampling and evaluating the address in a subsequent clock cycle. However, various coherency techniques are well known in the art.

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate various coherency techniques into Singh's system so as to obtain good data.

As per claims 24, 30, Singh discloses wherein the plurality of agents are disposed in the individual devices to perform as distributed agents in a distributed arbitration scheme. [0049]

As per claim 25, Singh discloses wherein the plurality of devices include a processor, cache memory, memory controller and input/output (I/O) interface, wherein agents within the processor, cache memory, memory controller and I/O interface drive and sample signals on the bus responsive to rising or falling edges of the clock signal. [0034]

As per claim 26, Singh discloses wherein tags are placed and used to identify corresponding data to the address.[0028], [0078]

As per claim 31, Singh discloses the method further comprising tagging address and data to identify corresponding address and data when data is driven out of order onto the bus. [0028-0029], [0078]

As per claims 27, 32, Singh discloses wherein the agents to drive the bus responsive to the rising edge and to sample responsive to the falling edge. [0068-0070]

As per claims 28, 33, Singh discloses wherein the agents to drive the bus responsive to the falling edge and to sample responsive to the rising edge. [0068-0070]

Response to Amendment

3. Applicant's amendment filed on 12/21/04 have been fully considered but does not place the application in condition for allowance.

a. In response to applicant's argument that the cited art do not teach or suggest an arbitration of a bus in one clock cycle; driving of an address onto the bus by an agent winning arbitration and agents involved in coherency sampling and evaluating the address in a subsequent clock cycle; agents involved in coherency responding with coherent response signals on the bus at a fixed number of clock cycle or cycles after the address; and data driven onto the bus in response to the address in which data may be driven not at a fixed number of clock cycle or cycles after the address to allow data to be driven out of order on the bus. Examiner respectfully disagrees. As Davis notes at [0063-0064] figure 3, discloses the arbitration timing diagram, the arbitration of a bus in one clock cycle. At [0044], the agent provide the response to the transaction. The

responding agent drives the response on the control bus and response signals on the bus at fixed number of clock cycle[0070], [0029]. Furthermore, various coherency techniques are well known in the art. It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate coherency sampling and evaluating the address in a subsequent clock cycle so as to obtain good data. Thus, the prior art teaches the invention as claimed and the amended claims do not distinguish over the prior art as applied.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (571)272-3635 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 9.00AM- 6:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached at (571)272-3632 or via e-mail addressed to [mark.Rinehart@uspto.gov].

The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2100.

Kim Huynh

April 1, 2005



TIM VO
PRIMARY EXAMINER